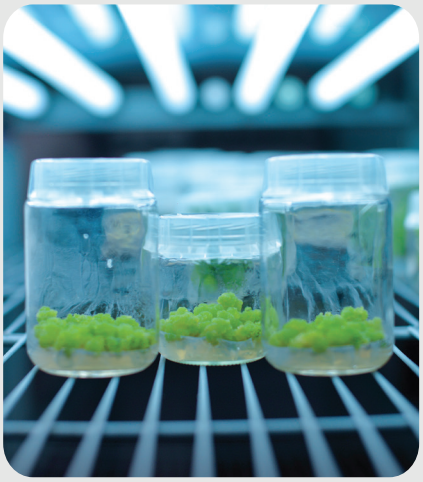
Professional
Skin Repair

Effects
- High antioxidant activity, protects the skin from oxidative stress and its effects.
- Shows effective wound healing activity.
- Prevents the formation of scars.
- Increases the moisture of the skin by stimulating the synthesis of hyaluronic acid.
- Reduces the appearance of wrinkles by stimulating the production of new collagen and elastin.
- Reduces the rough appearance of the skin.

Origin
Developed from Symphytum officinale (Comfrey) stem cells using ProliCell® Technology.



What is ProliCell® Technology?
ProliCell® Technology enables to benefit the effects of plant stem cells and small RNAs in their vesicles.

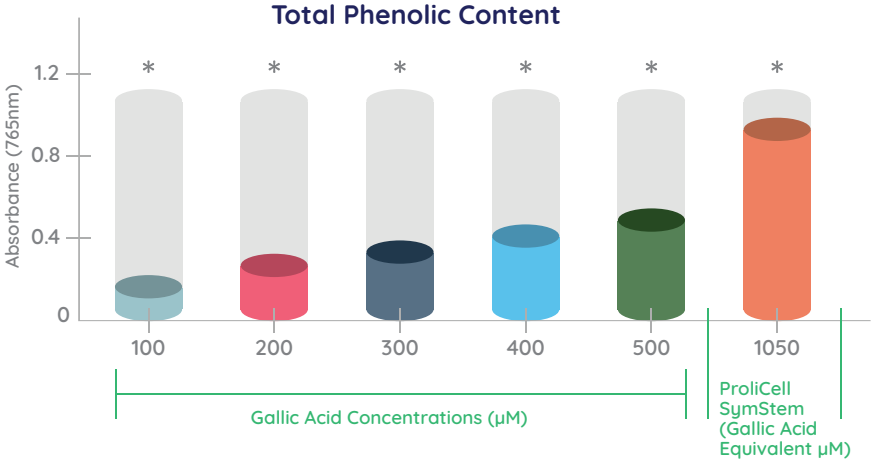
Effect Mechanism
ProliCell® SymStem contains enriched stem cell components and stem cell specific exogenous small RNAs thanks to the elicitor application.

What is the effect of small RNA?
Small RNAs, including miRNA are non-coding RNA fragments, which regulate the post-transcriptional silencing of target genes. Plant small RNAs may exert similar functions in both human and plant. This provides exogenous plant small RNAs to play a key role on the physiological function of the human body, including the skin.

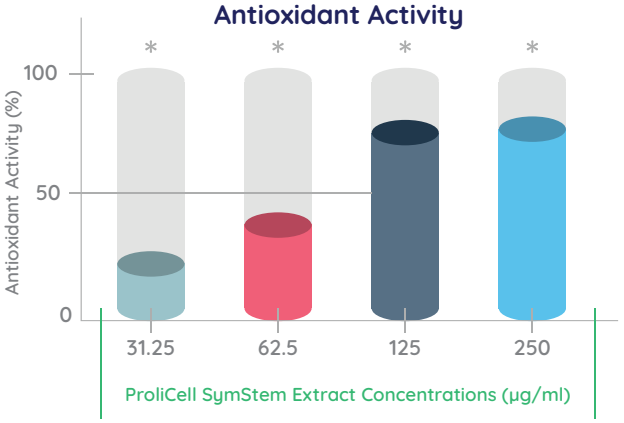
Activity Tests

Chemical Activity Tests
Folin Ciocalteu Method and DPPH Radical Scavenging Activity Method

Total Phenolic Content



Antioxidant Activity



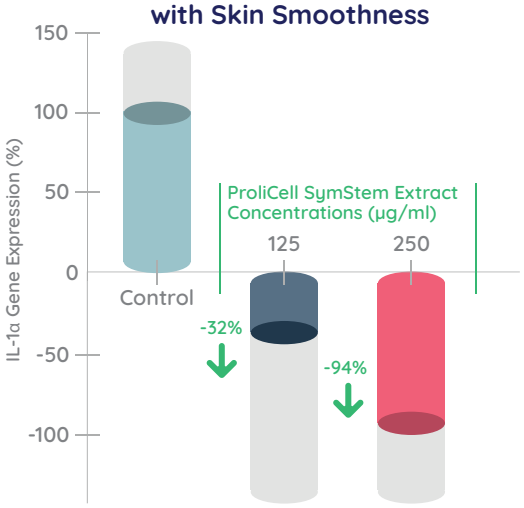
ProliCell SymStem has a high phenolic content and high antioxidant activity.

In vitro Tests

Cell line: Human Normal Fibroblast Cell
Test Components: 100 ve 200 µg/ml ProliCell SymStem extract
Parameter: Analysis of AQP3, HAS3, IL1α, FLG, TGM,CLDN1,CASPASE 14, COL1A1, ELN, VEGF and TGFβ genes expression by RT-qPCR, Scratch Assay Analysis, Pro-Collagen Type 1-C Synthesis

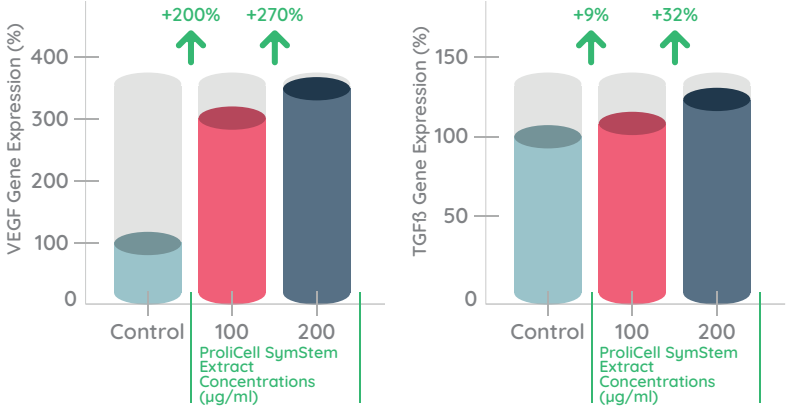
For gene and protein expression assays, fibroblast cells were incubated with ProliCell SymStem concentrations for 24 hours.

Gene Expression Analysis Associated with Skin Smoothness



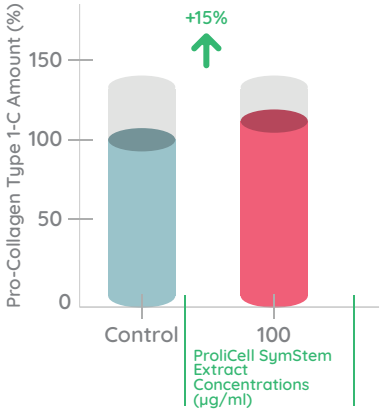
ProliCell SymStem reduces the expression of IL-1α in keratinocyte cells, which causes the skin to appear rough.

Expression Analysis of Genes Associated with Wound Healing Activity



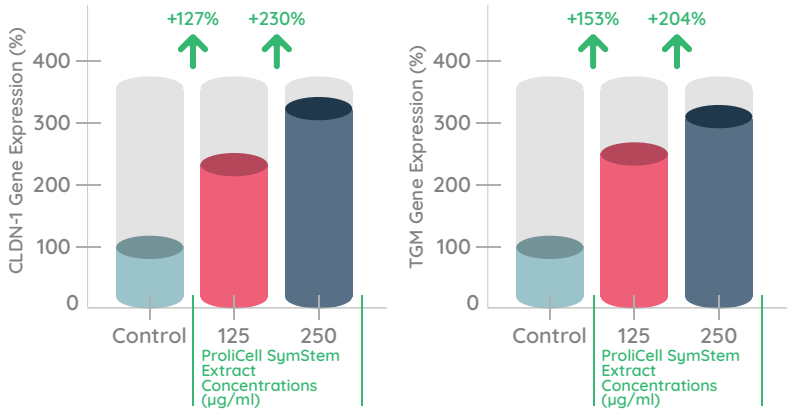
ProliCell SymStem accelerates wound healing by increasing VEGF and TGFß gene expressions.

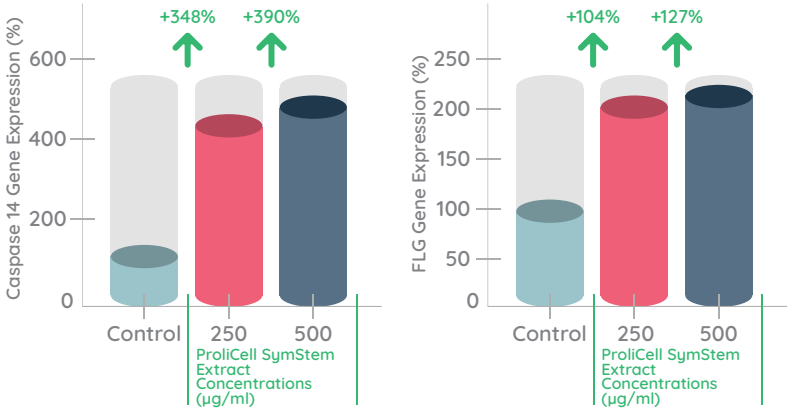
Effect on Pro-Collagen Type 1-C Synthesis



ProliCell SymStem strengthens connective tissue by increasing Pro-collagen type 1 C-peptide synthesis.

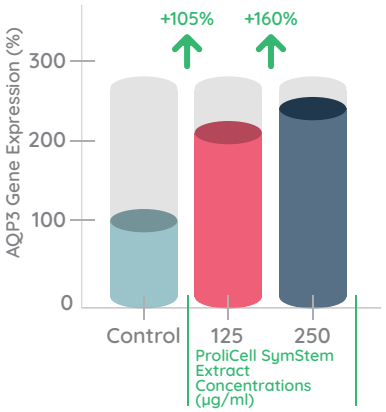
Gene Expression Analysis Associated with the Skin Barrier

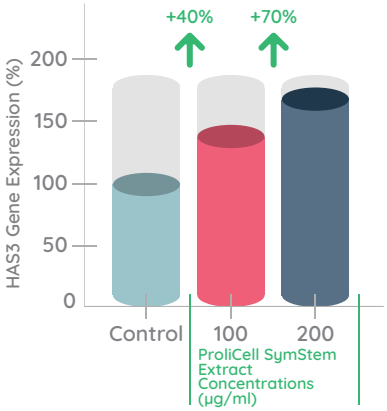




ProliCell SymStem helps maintain the skin barrier by increasing CLDN-1, TGM, Caspase 14 and FLG gene expressions in keratinocyte cells.

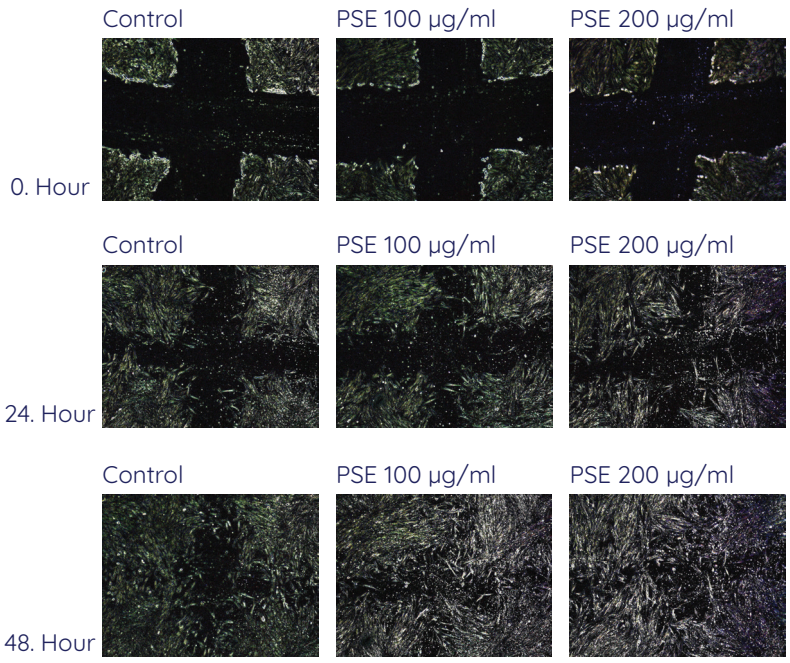
Expression Analysis of Genes Associated with Skin Moisture





ProliCell SymStem increases the synthesis of AQP3 and HAS3 provides a moist and lively appearance of the skin.

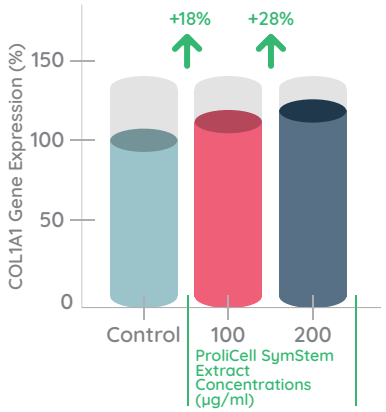
Determination of Wound Healing with the Scratch Assay Method

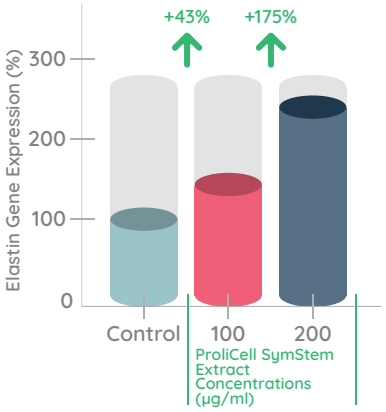


ProliCell SymStem facilitates wound healing by increasing migration and cell migration in fibroblast cells.

PSE: ProliCell SymStem Extract

Expression Analysis of Genes Associated with Anti-Aging and Skin Elasticity





ProliCell SymStem reduces the aged appearance of the skin, strengthens the connective tissue and increases the elasticity of the skin by increasing COL1A1 and ELN gene expression.

Effect Mechanism

- Anti-aging
- Wound Healer

Cosmetic Uses

- Anti-aging Products
(Face and Skin Care Products)
- Wound Healing Products
(Face and Skin Care Products)
- Tissue Regenerating Products

INCI name: Glycerin, Symphytum Officinale Callus Culture Extract, Xanthan Gum.
Usage Rate: 2-5%
Solubility: Water-soluble
Preservative: No preservative
pH: 4.0-7.0

Features

Origin: Herbal
Appearance: Viscous cell lysate suspension
Color: Dark brown
Odor: Characteristic
Usage: Add below 40°C in cold-hot processes.

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